EXHIBIT A

Applicant	Solum	**AMENDMENT AND RESPONSE UNDER 37 C.F.R. § 1.111**
Serial No.	10/084,115	
Filing Date	2/25/2002	
Confirmation No.	6841	
Examiner Name	Nguyen, Thuan T.	
Group Art Unit	2685	
Attorney Docket No.	100.255US01	
Title: DISTRIBUTED AUTOMATIC GAIN CONTROL SYSTEM		

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Applicants have reviewed the Office Action mailed on May 19, 2006. Please amend the above-identified application as follows.

Amendments to the Claims are reflected in the listing of claims that begins on page 2 of this paper.

Remarks begin on page 11 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of claims:

1. (Currently Amended) A wireless distribution system, comprising:

a plurality of remote units distributed in a coverage area to receive upstream supported and non-supported wireless signals;

a plurality of input ports to receive signals comprising the wireless signals provided by the plurality of remote units;

a plurality of input power monitors operatively connected to one or more of the plurality of input ports to determine power levels of signals received at the input ports;

a plurality of variable gain controllers to control the gain of signals received at the one or more of the plurality of input ports in response to a plurality of corresponding control signals;

a node to combine a plurality of signals from the plurality of input ports; and

a controller to provide the plurality of corresponding control signals to individually control each of the variable gain controllers.

2. (Original) The wireless distribution system of claim 1, wherein the controller provides control signals based on a weighting function.

3. (Original) The wireless distribution system of claim 2 wherein the weighting function is proportional to power levels determined by the input power monitors such that a combined power does not exceed a predetermined level.

4. (Original) The wireless distribution system of claim 2 further comprising a combined power monitor to determine the combined power level of signals combined at the node.

5. (Original) The wireless distribution system of claim 1, wherein the plurality of input power monitors are operatively connected to the plurality of input ports to determine power levels of signals received at the input ports so that an upstream combined signal level does not exceed a predetermined level.

6. (Original) The wireless distribution system of claim 1, wherein the signals received at the input ports comprise a frequency spectrum that is digitized for distribution over the wireless distribution system.

7. (Original) The wireless distribution system of claim 6 wherein the digitized wireless spectrum is transmitted, at least in part, over a fiber optic transmission line.

8. (Original) The wireless distribution system of claim 1, wherein one or more of the variable gain controllers comprises a filter.

9. (Original) The wireless distribution system of claim 1, wherein the filter comprises an adaptive filter.

10. (Original) The wireless distribution system of claim 1, further comprising a transmission link to transmit the signals combined at the node to at least one upstream node where the combined signals may be further combined with other signals.

11. (Original) The wireless distribution system of claim 10 further comprising at least one combined power monitor operatively connected to an output of the upstream node to monitor the power level of the signals combined at the at least one upstream node and

at least one variable gain controller to control the power level of signals input to at least one upstream node such that the power level at the upstream node does not exceed a predetermined level.

12. (Currently Amended) A method for controlling the signal levels of a wireless distribution system, the method comprising:

receiving upstream supported and non-supported wireless signals at a plurality of remote units distributed in a coverage area;

providing signals from the remote units to a plurality of input ports;

monitoring input power levels of the signals received at one or more of the plurality of input ports;

combining signals from the plurality of input ports at a node;

determining individual control signals for each of the input ports based on a weighting function that is proportional to the monitored input power levels such that the combined power does not exceed a predetermined level, and

gain controlling the signals received at the input ports in response to the control signals.

13. (Original) The method of claim 12 further comprising monitoring the combined power level of signals combined at the node.

14. (Currently Amended) A method for controlling the signal levels of a wireless distribution system, the method comprising:

receiving upstream supported and non-supported wireless signals at a plurality of remote units distributed in a coverage area;

providing signals from the remote units to a plurality of input ports;

monitoring the input power level of the signals received at each of the input ports;

controlling the gain of the signals received at each of the input ports in response to a control signal;

combining the signals from the plurality of input ports at a node;

monitoring power levels of the combined signals;

determining weights for a weighting function that is proportional to power received at each input port, as determined by the input power monitors such that the power of the combined signals does not exceed a predetermined level; and

providing the control signals to each input port based on the weighting function.

15. (Currently Amended) A wireless distribution system, comprising:

a plurality of remote units distributed in a coverage area to receive upstream supported and non-supported wireless signals and to provide the wireless signals through the distribution system to one or more input ports;

a plurality of input power monitors operatively connected to the one or more input ports to determine power levels of the wireless signals received at the input port;

a plurality of variable gain controllers to control the gain of the wireless signals received at the one or more input ports based on a predetermined threshold wherein a saturation level is not reached.

16. (Currently Amended) A wireless distribution system comprising:

a plurality of remote units distributed in a coverage area to receive upstream supported and non-supported wireless signals and to provide the wireless signals through the distribution system to one or more input ports;

a plurality of input power monitors operatively connected to one or more of the input ports to determine power levels of the wireless signals received at the input ports;

a plurality of variable gain controllers to control the gain of the wireless signals received at one or more of the input ports;

a node to combine the wireless signals from the plurality of input ports;

a combined power monitor to determine a power level of the signals combined at the node; and

a controller to provide control signals to control one or more of the variable gain controllers so that an overflow condition does not occur at the node.

17. (Original) The wireless distribution system of claim 16, wherein the signals are converted to digital signals before such signals are combined at the node.

18. (Currently Amended) A method for controlling the signal levels of a wireless distribution system, the method comprising:

receiving a spectrum of upstream supported and non-supported wireless signals at a plurality of remote units distributed in a coverage area;

digitizing the received signals;

transmitting the digitized signals over one or more transmission links to a plurality of input ports operatively connected to a node where the signals are combined;

monitoring input power levels of the signals received at one or more of the plurality of input ports;

monitoring the combined power level of the signals combined at the node;

determining individual control signals for controlling the signal levels of each of the input ports based on a weighting function that is proportional to the monitored input power levels such that the combined power as determined by the combined power monitor does not exceed a predetermined level, and

attenuating the signals received at each of the input ports in response to the control signals.

19. (Original) The method of claim 18 further comprising transmitting the signals combined at the node to at least one upstream node where the combined signals are further combined with other signals.

20. (Original) The method of claim 19 further comprising monitoring the combined power level of the signals combined at the at least one upstream node;

determining individual control signals for controlling the signal levels of each of the signals supplied to input ports of the at least one upstream node based on a weighting function that is proportional to the monitored power levels of such signals such that the combined power as determined by a combined power monitor for the at least one upstream node does not exceed a predetermined level, and

controlling the gain of the signals supplied to one or more input ports to the upstream node in response to the control signals.

21. (Original) The method of claim 20, wherein controlling the gain of the signals supplied to one or more input ports comprises filtering.

22. (Original) The method of claim 21, wherein the filtering comprises adaptive filtering.

23. (Currently Amended) A digital expansion unit, comprising:

a plurality of input ports to receive signals <u>comprising upstream supported and non-supported signals</u> from a plurality of digital remote units distributed in a coverage area;

a node to digitally combine signals from the input ports;

a plurality of input power monitors operatively connected to one or more of the input ports to determine the level of signals received at the input ports,

a plurality of gain controllers to adjust the gain of signals received at some or all of the input ports;

a combined power monitor to determine the combined signal level of signals combined at the node; and

a controller to provide control signals to control one or more of the gain controllers wherein an overflow condition is avoided for signals combined at the node.

24. (Currently Amended) A wireless distribution system comprising one or more digital expansion units, the digital expansion units comprising:

a plurality of input ports to receive signals comprising upstream supported and non-supported signals from a plurality of digital remote units distributed in a coverage area;

a node to digitally combine signals from the input ports;

a plurality of input power monitors operatively connected to one or more of the input ports to determine the level of signals received at the input ports,

a plurality of gain controllers to adjust the gain of signals received at some or all of the input ports;

a combined power monitor to determine the combined signal level of signals combined at the node; and

a controller to provide control signals to control one or more of the gain controllers wherein an overflow condition is avoided for signals combined at the node.

25. (Currently Amended) A wireless distribution system, comprising:

a plurality of remote units distributed in a coverage area to receive upstream supported and non-supported wireless signals in the coverage area;

a node to combine a plurality of wireless signals from one or more of the plurality of remote units;

a power monitor to determine a power level of the wireless signals combined at the node; and

a variable gain controller to control the gain of the signals combined at the node.

26. (Original) The wireless distribution system of claim 25, wherein the signals received at the plurality of remote units comprise a frequency spectrum that is digitized for distribution over the wireless distribution system.

27. (Original) The wireless distribution system of claim 26 wherein the digitized wireless spectrum is transmitted, at least in part, over a fiber optic transmission line.

28. (Original) The wireless distribution system of claim 25, wherein the variable gain controller comprises a filter.

29. (Original) The wireless distribution system of claim 28, wherein the filter comprises an adaptive filter.

30. (Original) The wireless distribution system of claim 25, further comprising a transmission link to transmit the signals combined at the node to at least one upstream node where the combined signals may be further combined with other wireless signals.

31. (Original) The wireless distribution system of claim 30 further comprising a power monitor operatively connected to an output of the at least one upstream node to monitor the power level of the signals combined at the upstream node; and

a variable gain controller to control the power level of signals combined at the at least one upstream node such that the output power level at the upstream node does not exceed a predetermined level.

32. (Currently Amended) A method for controlling the signal levels of a wireless distribution system, the method comprising:

receiving a spectrum of upstream supported and non-supported wireless signals at a plurality of remote units distributed in a coverage area;

digitizing the received signals;

transmitting the digitized signals over one or more transmission links to a node where the signals are combined;

monitoring the power level of the combined signals at the node; and

controlling the gain of the combined signals in response to the monitored power level.

33. (Original) The method of claim 32 further comprising transmitting the signals combined at the node to at least one upstream node where the combined signals are further combined with other wireless signals.

34. (Original) The method of claim 33 further comprising monitoring the power level of the signals combined at the at least one upstream node; and

controlling the gain of the signals combined at the at least one upstream node in response to the monitored power level.

35. (Original) The method of claim 34 wherein controlling the gain of the signals comprises digital filtering.

36. (Original) The method of claim 35 wherein the filtering comprises adaptive filtering.

EXHIBIT A

Electronic Acknowledgement Receipt

EFS ID:	1151194
Application Number:	10084115
Confirmation Number:	6841
Title of Invention:	Distributed automatic gain control system
First Named Inventor:	Jeff Solum
Customer Number:	34206
Filer:	David Fogg/Lisa Gentry
Filer Authorized By:	David Fogg
Attorney Docket Number:	100.255US01
Receipt Date:	11-AUG-2006
Filing Date:	25-FEB-2002
Time Stamp:	15:06:24
Application Type:	Utility
International Application Number:	

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part	Pages
1		00078438.pdf	809061	yes	18

	EXHIBIT A **Multipart Description**		
	Doc Desc	**Start**	**End**
	Amendment - After Non-Final Rejection	1	1
	Claims	2	10
	Applicant Arguments/Remarks Made in an Amendment	11	18

Warnings:	
Information:	
Total Files Size (in bytes):	809061

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.